PATENT ABSTRACTS OF JAPAN

(11)Publication number : 09-232074
(43)Date of publication of application : 05.09.1997

(51)Int.Cl. H05B 33/08

(21)Application number : 08-038393
(22)Date of filing : 26.02.1996

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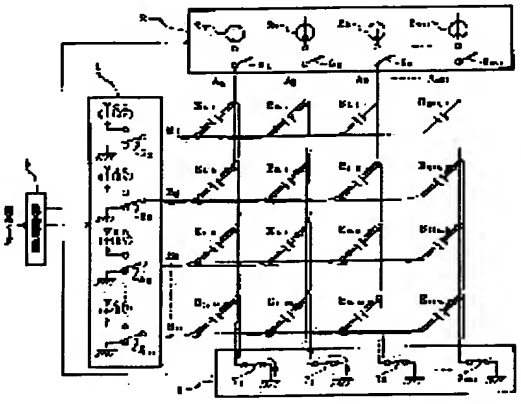
(54) DRIVING METHOD OF LIGHT EMITTING ELEMENT

(57)Abstract:
PROBLEM TO BE SOLVED: To provide a driving method and a driving device of light emitting elements by which rising speed up to emitting the light from voltage impression can be quickened and high speed scanning can be performed and size reduction in a driving source can be attained.
SOLUTION: This driving method of a light emitting element is composed of a simple matrix driving system constituted in such a way that light emitting elements E1.1 to E256.64 are connected to respective intersectional positions of anode rays A1 to A256 and cathode rays B1 to B64 arranged in a matrix shape, and either one side of the anode rays and the cathode rays is set as scanning lines, and the other side is set as drive lines, and the light emitting elements connected to intersectional positions of the scanning lines and the drive lines are made to emit the light by connecting a drive source to a desired drive line in synchronism with the scanning while scanning the scanning lines in a prescribed period. At switching time to the next scanning line, all the scanning lines B1 to B64 are once connected to reset voltage 0V (or Vcc) composed of the same electric potential.



LEGAL STATUS

[Date of request for examination]	20.02.2003
[Date of sending the examiner's decision of rejection]	16.09.2003
[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]	
[Date of final disposal for application]	
[Patent number]	3507239
[Date of registration]	26.12.2003
[Number of appeal against examiner's decision of rejection]	2003-20129
[Date of requesting appeal against examiner's decision of rejection]	16.10.2003
[Date of extinction of right]	

* NOTICES *

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CLAIMS

[Claim(s)]
[Claim 1] Making an another side side into a drive line, and scanning the scanning line a predetermined period, while connecting a light emitting device to each intersection location of anode rays and cathode rays arranged in the shape of a matrix and making the either side of said anode rays and cathode rays into the scanning line In the drive approach of the light emitting device which consists of a simple matrix drive method it was made to make the light emitting device connected to the intersection location of the scanning line and a drive line by connecting a driving source to a desired drive line synchronizing with this scan emit light The drive approach of the light emitting device which switches and is sometimes characterized by connecting on the reset electrical potential difference to the following scanning line which once consists all the scanning lines of the same potential.
[Claim 2] The drive approach of the light emitting device characterized by said reset electrical potential difference being ground potential in the drive approach of a light emitting device according to claim 1.
[Claim 3] The drive approach of the light emitting device characterized by said reset electrical potential difference being power-source potential in the drive approach of a light emitting device according to claim 1.
[Claim 4] The drive approach of the light emitting device characterized by omitting all the driving sources by the side of a drive in the drive approach of a light emitting device according to claim 1 to 3.

[Translation done.]

CLAIMS

[Claim(s)]
[Claim 1] Making an another side side into a drive line, and scanning the scanning line a predetermined period, while connecting a light emitting device to each intersection location of anode rays and cathode rays arranged in the shape of a matrix and making the either side of said anode rays and cathode rays into the scanning line In the drive approach of the light emitting device which consists of a simple matrix drive method it was made to make the light emitting device connected to the intersection location of the scanning line and a drive line by connecting a driving source to a desired drive line synchronizing with this scan emit light The drive approach of the light emitting device which switches and is sometimes characterized by connecting on the reset electrical potential difference to the following scanning line which once consists all the scanning lines of the same potential.
[Claim 2] The drive approach of the light emitting device characterized by said reset electrical potential difference being ground potential in the drive approach of a light emitting device according to claim 1.
[Claim 3] The drive approach of the light emitting device characterized by said reset electrical potential difference being power-source potential in the drive approach of a light emitting device according to claim 1.
[Claim 4] The drive approach of the light emitting device characterized by omitting all the driving sources by the side of a drive in the drive approach of a light emitting device according to claim 1 to 3.

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* NOTICES *

TECHNICAL FIELD

[Field of the Invention] This invention relates to the drive approach for making light emitting devices, such as organic electroluminescence (electroluminescence), emit light.

[Translation done.]

PRIOR ART

[Description of the Prior Art] The drive approach of the conventional light emitting device is shown in drawing 13 . The drive approach of this drawing 13 is what is called a simple matrix drive method. Anode-rays A1 -Am Cathode-rays B1 -Bn It arranges in the shape of a matrix (grid). It is a light emitting device E1, 1 -Em, and n to each intersection location of anode rays and cathode rays arranged in the shape of [this] a matrix. While connecting, making sequential selection and scanning either these anode rays or cathode rays with a fixed time interval It synchronizes with this scan and is 521-52m of driving source slack current sources about the line of another side. It is made to make the light emitting device of the intersection location of arbitration emit light by driving.
[0003] although there are two approaches, a cathode-rays scan and an anode-rays drive, and an anode-rays scan and a cathode-rays drive, among the drive approaches by said driving source — drawing 13 — the case of a cathode-rays scan and an anode-rays drive — being shown — **** — cathode-rays B1 -Bn while connecting the cathode-rays scanning circuit 51 — anode-rays A1 -Am 521-52m of current sources from — the becoming anode-rays drive circuit 52 is connected. The cathode-rays scanning circuit 51 is 531-53n of switches. By scanning switching to a grounding terminal side one by one with a fixed time interval, it is cathode-rays B1 -Bn. It receives and ground potential (0V) is given one by one. Moreover, the anode-rays drive circuit 52 synchronizes with the switch scan of said cathode-rays scanning circuit 51, and is 541-54m of switches. It is anode-rays A1 -Am by carrying out on-off control. Current sources 521-52m It connects and a drive current is supplied to the light emitting device of a desired intersection location.
[0004] for example, the light emitting device E — 2 and 1 E — 3 and 1 If the case where light is made to emit is taken for an example, so that it may illustrate Switch 531 of the cathode-rays scanning circuit 51 It is switched to a ground side. The 1st cathode rays B1 When ground potential is given, it is the switch 542 of the anode-rays drive circuit 52. 543 It switches to a current source side and they are anode rays A2. A3 Current source 522 523 What is necessary is just to connect. While making the light emitting device of the location of arbitration emit light by repeating such a scan and a drive at high speed, it controls as each light emitting device is emitting light to coincidence.
[0005] cathode rays B1 under scan Other cathode-rays B-2 -Bn(s) of an except **** — incorrect luminescence is prevented by impressing supply voltage and the reverse bias electrical potential difference VCC of same electric potential. In addition, at said drawing 13 , it is 521-52m of current sources as a driving source. Although used, even if it uses a voltage source, it is realizable similarly.

[Translation done.]

EFFECT OF THE INVENTION

[Effect of the Invention] As explained above, when being based on invention according to claim 1 to 3 After applying reset to all the scanning lines, while charging the parasitic capacitance of the light emitting device which should be made to emit light by switching a scan location to the following scanning line by the driving source through a drive line Since coincidence was charged also with the reverse bias electrical potential difference of the scanning line through the parasitic capacitance of other light emitting devices which do not emit light, the both-ends electrical potential difference of the light emitting device which should be made to emit light can be made to be able to start to the potential which can emit light in an instant, and a light emitting device can be made to emit light in an instant. Moreover, since charge through other light emitting devices is used, capacity of each driving source can be made small and it is possible to miniaturize a driving gear.
[0065] Furthermore, since it enabled it to emit light at a high speed when based on invention according to claim 4, omitting all the driving sources by the side of a drive line, it is possible still briefer and to miniaturize a driving gear.

TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] By the way, the light emitting device E2 connected to each intersection location, 1 -Em, and n Although each could be expressed with the parasitic capacitance C by which parallel connection was carried out to the luminescence element E which consists of diode characteristics, and this as that equal circuit was shown in drawing 14 , it had the following problems by the conventional drive approach mentioned above for the parasitic capacitance C in this equal circuit.
[0007] That is, drawing 15 (A) and (B) are the anode rays A1 in said drawing 13 . The connected light emitting device E1, 1 -E1, and n Only a part is extracted and they are each light emitting device E1, 1 -E1, and n. Although illustrated using said parasitic capacitance C Cathode rays B1 They are anode rays A1 at the time of a scan. When not driven it is shown in (A) — as — cathode rays B1 under current scan the connected light emitting device E — 1 and 1 Parasitic capacitance 1 and C 1 other light emitting devices E1 to remove and 2 - E1 and n parasitic capacitance C1 and 2 - C1 and n each — cathode-rays B-2 -Bn Sense like illustration charges with the given reverse bias electrical potential difference VCC.
[0008] next, a scan location — cathode rays B1 from — following cathode-rays B-2 the time of moving — for example, the light emitting device E — 1 and 2 in order to make light emit — anode rays A1 If it drives the light emitting device E which the circuit condition at this time should become a thing as shown in (B), and should be made to emit light — 1 and 2 Parasitic capacitance 1 and C 2 It not only charges, but other cathode-rays B3 -Bn(s) the connected light emitting device E1 and 3 - E1 and n parasitic capacitance C1 and 3 - C1 and n A current flows into the sense as received and shown by the arrow head, and charge is performed.
[0009] By the way, a light emitting device cannot perform normal luminescence, unless the electrical potential difference of the both ends starts beyond default value. in the conventional drive approach, it was shown in said drawing 15 (A) and (B) — as — cathode-rays B-2 the connected light emitting device E — 1 and 2 in order to make light emit — anode rays A1 If it drives the light emitting device E which should be made to emit light — 1 and 2 Parasitic capacitance 1 and C 2 not only — anode rays A1 other connected light emitting devices E1 and 3 - E1 and n parasitic capacitance C1 and 3 - C1 and n Also receive and charge is performed. until charge of the parasitic capacitance of all these light emitting devices is completed — cathode-rays B-2 the connected light emitting device E — 1 and 2 A both-ends electrical potential difference cannot start beyond default value.
[0010] For this reason, in the conventional drive approach, there was a problem that the rate of rise until it emits light was slow, and rapid scanning was not made, for said parasitic capacitance. moreover, the parasitic capacitance of all the light emitting devices connected to anode rays must be charged — a sake — each anode rays — connecting — a drive — ** — what also has the big current capacity of a driving source — not carrying out — it did not obtain but there was room of a thought also from the point of the miniaturization of a circuit.
[0011] Said problem becomes larger, as the number of light emitting devices increases. When organic electroluminescence is especially used as a light emitting device, said parasitic capacitance C of organic electroluminescence is large because of field luminescence, and said problem will become still more remarkable. The place which it was made in order that this invention might solve the above problems, and is made into the purpose is offering the drive approach of the light emitting device which can miniaturize a driving source, and a driving gear while the rate of rise until it emits light from supply initiation of a drive current is quick and being able to perform rapid scanning.

[Translation done.]

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MEANS

[Means for Solving the Problem] In order to solve said technical problem, the following means were adopted in this invention. Namely, invention according to claim 1 connects a light emitting device to each intersection location of anode rays and cathode rays arranged in the shape of a matrix. Making an another side side into a drive line, and scanning the scanning line a predetermined period, while making the either side of said anode rays and cathode rays into the scanning line In the drive approach of the light emitting device which consists of a simple matrix drive method it was made to make the light emitting device connected to the intersection location of the scanning line and a drive line by connecting a driving source to a desired drive line synchronizing with this scan emit light Sometimes, it is characterized by connecting on the reset electrical potential difference to the following scanning line which once consists all the scanning lines of the same potential by switching.
[0013] Moreover, invention according to claim 2 is characterized by said reset electrical potential difference being ground potential in said invention according to claim 1.
[0014] Moreover, invention according to claim 3 is characterized by said reset electrical potential difference being power-source potential in said invention according to claim 1.
[0015] Moreover, invention according to claim 4 is characterized by omitting all the driving sources by the side of a drive line in said invention according to claim 1 to 3.
[0016] If a scan location is switched to the following scanning line after applying reset to all the scanning lines, when it considers as the above configurations, the parasitic capacitance of the light emitting device which should be made to emit light will be charged by coincidence also with the reverse bias electrical potential difference of the scanning line through the parasitic capacitance of other light emitting devices which do not emit light while a driving source charges through a drive line. For this reason, since the light emitting device which should be made to emit light starts to the potential to which that both-ends electrical potential difference can emit light in an instant, it can emit light in an instant.
[0017] Moreover, even when the driving source by the side of a drive line is omitted, the parasitic capacitance of the light emitting device which should be made to emit light is charged with the reverse bias electrical potential difference of the scanning line through the parasitic capacitance of other light emitting devices which do not emit light, and only a short time emits light. Therefore, omitting the driving source by the side of a drive line by making it scan a period shorter than this luminescence time amount, lighting control can be carried out as continuation luminescence of the light emitting device is carried out.
[0018]
[Embodiment of the Invention] Hereafter, the gestalt of operation of this invention is explained with reference to a drawing. The 1st drive approach which starts this invention at drawing 1 - drawing 4 is shown. This 1st drive approach is an example at the time of dropping all cathode rays and all anode rays on ground potential (0V) once, and resetting them, in case a scan moves to the following cathode rays.
[0019] drawing 1 - drawing 4 -- setting -- A1 -A256 anode rays and B1 -B64 -- cathode rays, E1, and 1 -E -- for the light emitting device with which 256 and 64 were connected with each intersection location, and 1, as for an anode-rays drive circuit and 3, a cathode-rays scanning circuit and 2 are [an anode plate reset circuit and 4] luminescence control circuits.
[0020] the cathode-rays scanning circuit 1 -- each -- it has the scan switch 51-564 for scanning cathode-rays B1 -B64 one by one. While one terminal of each scan switch 51-564 is connected to the reverse bias electrical potential difference VCC (for example, 10V) which consists of supply voltage, the other-end child is connected to ground potential (0V), respectively.
[0021] the anode plate drive circuit 2 -- a driving source -- current source 21-2256 each -- anode-rays A1 -A256 Drive switch 61-6256 for choosing having and turning on the drive switch of arbitration -- the anode rays concerned -- receiving -- current source 21-2256 for a drive It connects.
[0022] Moreover, the anode plate reset circuit 3 is anode-rays A1 -A256. Shunt switch 71-7256 for resetting to ground potential (0V) It has.
[0023] In addition, these scan switches 51-564 and the drive switch 61-6256 And shunt switch 71-7256 Turning on and off is controlled by the luminescence control circuit 4.
[0024] Next, with reference to said drawing 1 - drawing 4 , the luminescence actuation by the 1st drive approach is explained. in addition, the actuation described below -- cathode rays B1 scanning -- a light emitting device E -- 1 and 1 E -- 2 and 1 Cathode-rays B-2 after shining a scan -- moving -- a light emitting device E -- 2 and 2 E -- 3 and 2 The case where it shines is taken and explained to an example. Moreover, in order to give explanation

intelligible, the diode notation showed the shining light emitting device, and the capacitor notation showed the light emitting device which has not shone. Moreover, the reverse bias electrical potential difference VCC impressed to cathode-rays B1 -B64 was set to the 10V [same] as the supply voltage of equipment.

[0025] First, at drawing 1 , it is the scan switch 51. It is switched to the 0V side and they are cathode rays B1. It is scanned. Reverse bias electrical-potential-difference 10V are impressed to other cathode-rays B-2 -B64 by the scan switch 52-564. furthermore, anode rays A1 A2 **** -- drive switch 61 62 A current source 51 and 52 It connects. other anode-rays A3 -A256 [moreover,] **** — shunt switch 73-7256 0V are given.

[0026] therefore, the case of drawing 1 — a light emitting device E — 1 and 1 E — 2 and 1 bias is carried out in the semi- direction — having — current source 51 52 from — an arrow head — like — a drive current — flowing in — a light emitting device E — 1 and 1 E — 2 and 1 Light is emitted. In the state of this drawing 1 , the light emitting device which carried out hatching to the capacitor and which was shown in it is in the condition that the polar sense respectively as shown in drawing charged. the light emitting device E of the luminescence condition of this drawing 1 to drawing 4 — 2 and 2 E — 3 and 2 In case a scan is shifted to the condition of emitting light, the following reset controls are performed.

[0027] namely, a scan — cathode rays B1 of drawing 1 from — cathode-rays B-2 of drawing 4 While turning off all the drive switches 51-564 first as shown in drawing 2 before shifting All scan switch 51-564 and all shunt switches 71-7256 are switched to the 0V side, and it is anode-rays A1 -A256. The shunt of all of cathode-rays B1 -B64 is once carried out to 0V, and the all reset by 0V is applied. If all reset to these 0V is performed, since all the anode rays and cathode rays will serve as same electric potential which is 0V, the charge charged by each light emitting device discharges through the root as shown by the arrow head in drawing, and the charge charge of all light emitting devices is set to zero within an instant.

[0028] As it is the above and is shown in drawing 3 after setting the charge charge of all light emitting devices to 0, it is cathode-rays B-2. Corresponding scan switch 52 It switches to the 0V side and is cathode-rays B-2. It scans. It can come, simultaneously is the drive switch 62. 63 Current source 22 23 While switching to a side, it is the shunt switch 71 and 74-7256. It turns on and is anode rays A1 and A4 -A256. 0V are given.

[0029] a switch of the above-mentioned switch — cathode-rays B-2 the light emitting device E which should next be made to emit light since the charge charge of all light emitting devices is set to 0 as mentioned above if a scan is performed — 2 and 2 E — 3 and 2 **** — the charging current flows in at a stretch by two or more roots as shown by the arrow head in drawing 3 , and the parasitic capacitance C of each light emitting device is charged in an instant.

[0030] namely, the light emitting device E — 2 and 2 **** — the current source 22 -> drive switch 62 -> anode-rays A2 -> light emitting device 2 and 2 -> scan switch 52 While the charging current flows in by the root The scan switch 51 -> cathode-rays B1 -> light emitting device E2, the 1 -> light emitting device E2, and 2 -> scan switch 52 Root, The scan switch 53 -> cathode-rays B3 -> light emitting device E2, the 3 -> light emitting device E2, and 2 -> scan switch 52 Root, ..., the scan switch 564 -> cathode-rays B64 -> light emitting device E2, the 64 -> light emitting device E2, and 2 -> scan switch 52 The charging current flows into coincidence also from the root. a light emitting device E — 2 and 2 According to the charging current of these plurality, it charges in an instant, light is emitted, and it shifts to the steady state shown in drawing 4 in an instant.

[0031] moreover, the light emitting device E — 3 and 2 **** — the current source 23 -> drive switch 63 -> anode-rays A3-> light emitting device 3 and 2 -> scan switch 52 While the charging current flows in by the usual root The scan switch 51 -> cathode-rays B1 -> light emitting device E3, the 1 -> light emitting device E3, and 2 -> scan switch 52 Root, The scan switch 53 -> cathode-rays B3 -> light emitting device E3, the 3 -> light emitting device E3, and 2 -> scan switch 52 Root, ..., the scan switch 564 -> cathode-rays B64 -> light emitting device E3, the 64 -> light emitting device E3, and 2 -> scan switch 52 The charging current flows into coincidence also from the root. a light emitting device E — 2 and 2 According to the charging current of these plurality, it charges in an instant, light is emitted, and it shifts to the steady state shown in drawing 4 in an instant.

[0032] When switched to the following scanning line, it can make the light emitting device on the switched scanning line emit light in an instant, since it connects with 0V which are once ground potential and the 1st drive approach reset all the cathode rays and anode rays, before shifting to the next scan as stated above.

[0033] in addition, said light emitting device E which should be made to emit light — 2 and 2E — 3 and 2 although charge is performed by the root as shown by the arrow head in drawing 3 about other light emitting devices of an except, respectively, since these charge directions are the directions of a reverse bias — a light emitting device E — - 2 and 2E — 3 and 2 There is no possibility that other light emitting devices of an except may incorrect-emit light.

[0034] At the example of said drawing 1 - drawing 4 , it is a current source 21-2256 as a driving source. Although the case where it used was shown, even if it uses a voltage source, it is realizable similarly.

[0035] The 2nd drive approach which starts this invention at drawing 5 - drawing 8 is shown. This 2nd drive approach is an example at the time of resetting all the cathode rays and anode rays to once supply voltage VCC=10V, before a scan moves to the following cathode rays. In order to realize this reset approach, in the circuit of drawing 5 - drawing 8 , they are the drive switches 61-6256. It carries out, the 1st contact is considered as disconnection using a three-point change-over switch, and the 2nd contact is a current source 21-2256. The 3rd contact is connected to supply voltage VCC=10V, respectively. In addition, this drive switch 61-6256 Since the circuitry of other parts of an except is the same as the case of the 1st drive approach mentioned above, that explanation is omitted.

[0036] Next, with reference to said drawing 5 - drawing 8 , the luminescence actuation by the 2nd drive approach is

explained. in addition, the 1st drive approach which mentioned above the actuation described below — the same — cathode rays B1 scanning — a light emitting device E — 1 and 1 E — 1 and 2 Cathode-rays B-2 after shining a scan — moving — a light emitting device E — 2 and 2 E — 3 and 2 The case where it shines is taken for an example.

[0037] First, at drawing 5 , it is the scan switch 51. It is switched to the 0V side and they are cathode rays B1. It is scanned. Reverse bias electrical-potential-difference 10V are impressed to other cathode-rays B-2 -B64 by the scan switch 52-564. furthermore, anode rays A1 A2 **** — drive switch 61 62 A current source 51 and 52 It connects. other anode-rays A3 -A256 [moreover,] **** — shunt switch 73-7256 0V are given.

[0038] therefore, the case of drawing 5 — a light emitting device E — 1 and 1 E — 2 and 1 bias is carried out in the semi- direction — having — current source 51 52 from — an arrow head — like — a drive current — flowing in — a light emitting device E — 1 and 1 E — 2 and 1 Light is emitted. In the state of this drawing 5 , the light emitting device which carried out hatching to the capacitor and which was shown in it is in the condition that the polar sense respectively as shown in drawing charged. the light emitting device E of the luminescence condition of this drawing 5 to drawing 8 — 2 and 2 E — 3 and 2 In case a scan is shifted to the condition of emitting light, the following reset controls are performed.

[0039] namely, a scan — cathode rays B1 of drawing 5 from — cathode-rays B-2 of drawing 8 before shifting, it is first shown in drawing 6 — as — all shunt switches 71-7256 While turning off

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] It is the explanatory view of the 1st step of the 1st drive approach of this invention.
[Drawing 2] It is the explanatory view of the 2nd step of the 1st drive approach of this invention.
[Drawing 3] It is the explanatory view of the 3rd step of the 1st drive approach of this invention.
[Drawing 4] It is the explanatory view of the 4th step of the 1st drive approach of this invention.
[Drawing 5] It is the explanatory view of the 1st step of the 2nd drive approach of this invention.
[Drawing 6] It is the explanatory view of the 2nd step of the 2nd drive approach of this invention.
[Drawing 7] It is the explanatory view of the 3rd step of the 2nd drive approach of this invention.
[Drawing 8] It is the 4th step explanatory view of the 2nd drive approach of this invention.
[Drawing 9] It is the explanatory view of the 1st step of the 3rd drive approach of this invention.
[Drawing 10] It is the explanatory view of the 2nd step of the 3rd drive approach of this invention.
[Drawing 11] It is the explanatory view of the 3rd step of the 3rd drive approach of this invention.
[Drawing 12] It is the explanatory view of the 4th step of the 3rd drive approach of this invention.
[Drawing 13] It is the explanatory view of the conventional drive approach.
[Drawing 14] It is drawing showing the equal circuit of a light emitting device.
[Drawing 15] It is the explanatory view of the charge-and-discharge condition at the time of the scan shift in the conventional drive approach.
[Description of Notations]
1 Cathode-Rays Scanning Circuit
2 Anode-Rays Drive Circuit
21 - 2256 Current Source (Driving Source)
3 Anode Plate Reset Circuit
4 Luminescence Control Circuit
51 - 564 Scan Switch
61 - 6256 Drive Switch
71 - 7256 Shunt Switch
A1 -A256 Anode rays (drive line)
B1 -B64 Cathode rays (scanning line)
E1 and 1 -E -- 256 and 64 Light emitting device
VCC Supply voltage

[Translation done.]

CORRECTION OR AMENDMENT

[Kind of official gazette] Printing of amendment by the convention of 2 of Article 17 of Patent Law
[Section partition] The 1st partition of the 7th section
[Publication date] June 13, Heisei 15 (2003. 6.13)

[Publication No.] JP,9-232074,A
[Date of Publication] September 5, Heisei 9 (1997. 9.5)
[Annual volume number] Open patent official report 9-2321
[Application number] Japanese Patent Application No. 8-38393
[The 7th edition of International Patent Classification]

H05B 33/08

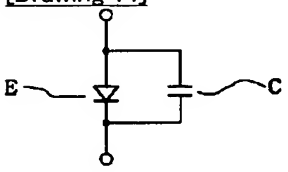
[FI]

H05B 33/08

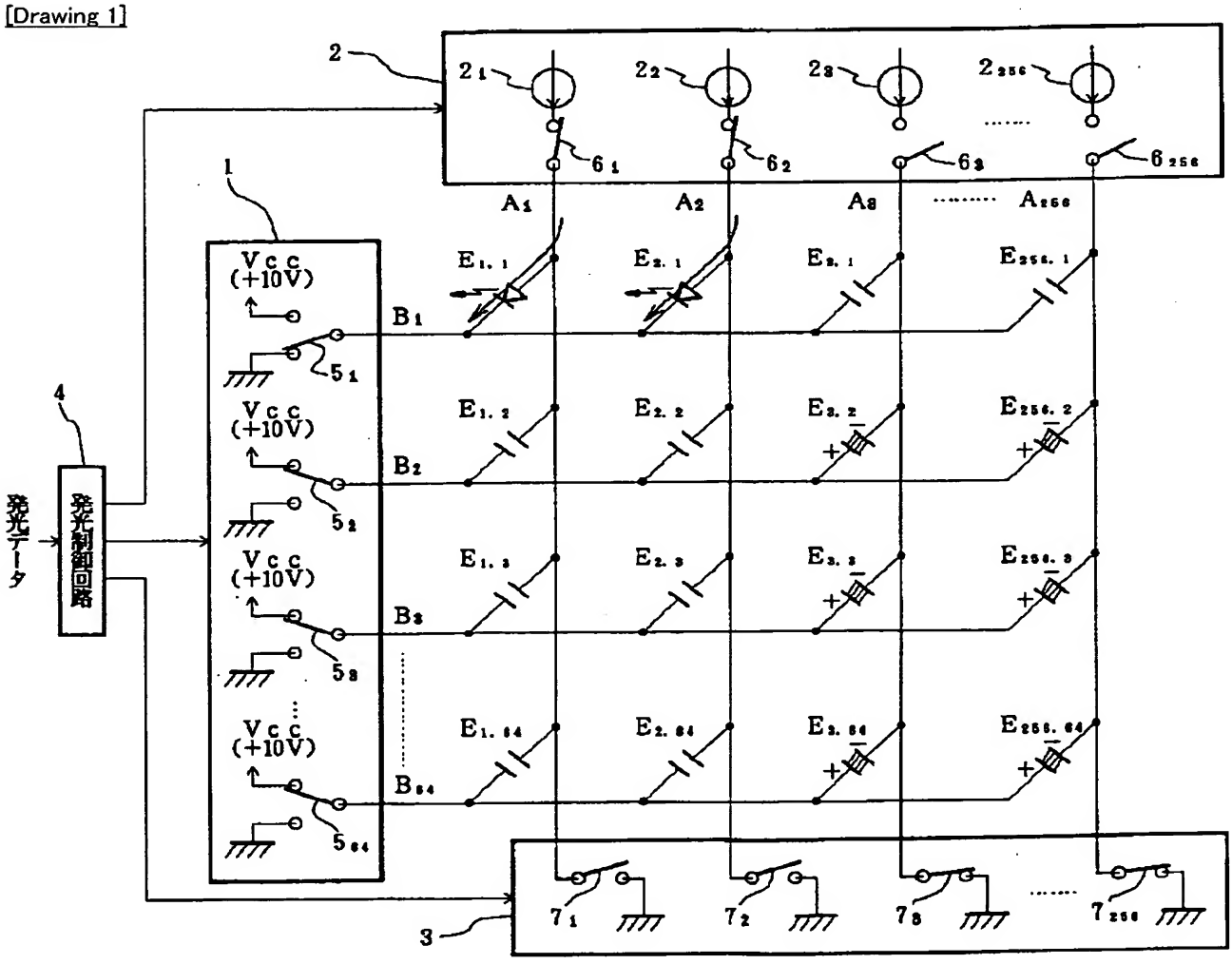
[Procedure revision]
[Filing Date] February 20, Heisei 15 (2003. 2.20)
[Procedure amendment 1]
[Document to be Amended] Specification
[Item(s) to be Amended] Claim
[Method of Amendment] Modification
[Proposed Amendment]
[Claim(s)]
[Claim 1] Making an another side side into a drive line, and scanning the scanning line a predetermined period, while connecting a light emitting device to each intersection location of anode rays and cathode rays arranged in the shape of a matrix and making the either side of said anode rays and cathode rays into the scanning line In the drive approach of the light emitting device which consists of a simple matrix drive method it was made to make the light emitting device connected to the intersection location of the scanning line and a drive line by connecting a driving source to a desired drive line synchronizing with this scan emit light,
The drive approach of the light emitting device which switches and is sometimes characterized by connecting on the reset electrical potential difference to the following scanning line which consists all the scanning lines of the same potential.
[Claim 2] In the drive approach of a light emitting device according to claim 1,
The drive approach of the light emitting device characterized by said reset electrical potential difference being ground potential.
[Claim 3] In the drive approach of a light emitting device according to claim 1,
The drive approach of the light emitting device characterized by said reset electrical potential difference being power-source potential.
[Claim 4] In the drive approach of a light emitting device according to claim 1 to 3,
The drive approach of the light emitting device characterized by resetting all cathode rays and all anode rays to ground potential in case the scan of said scanning line which consists of cathode rays moves to the following cathode rays.
[Claim 5] In the drive approach of a light emitting device according to claim 1 to 3,

DRAWINGS

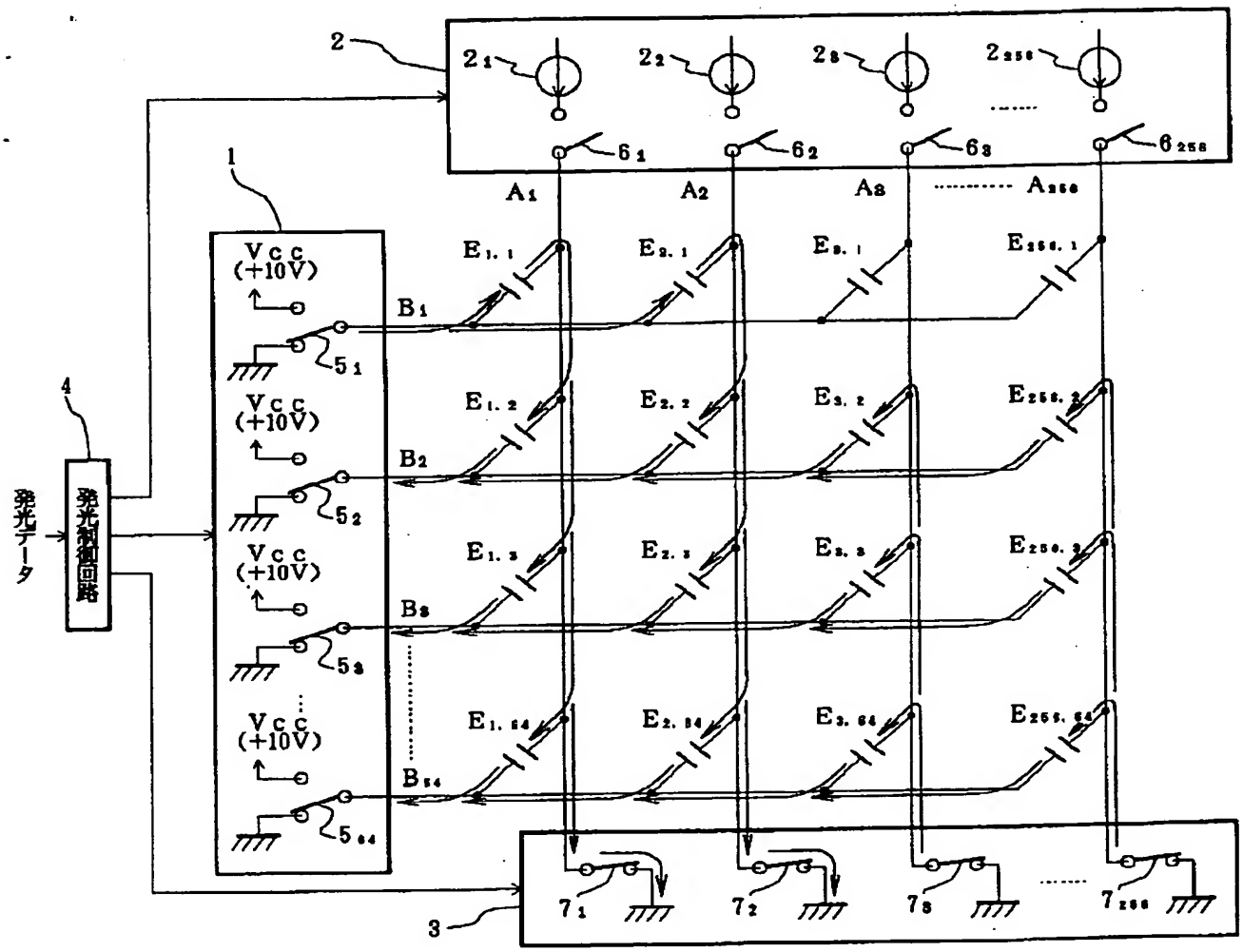
[Drawing 14]



[Drawing 1]



[Drawing 2]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発光データ
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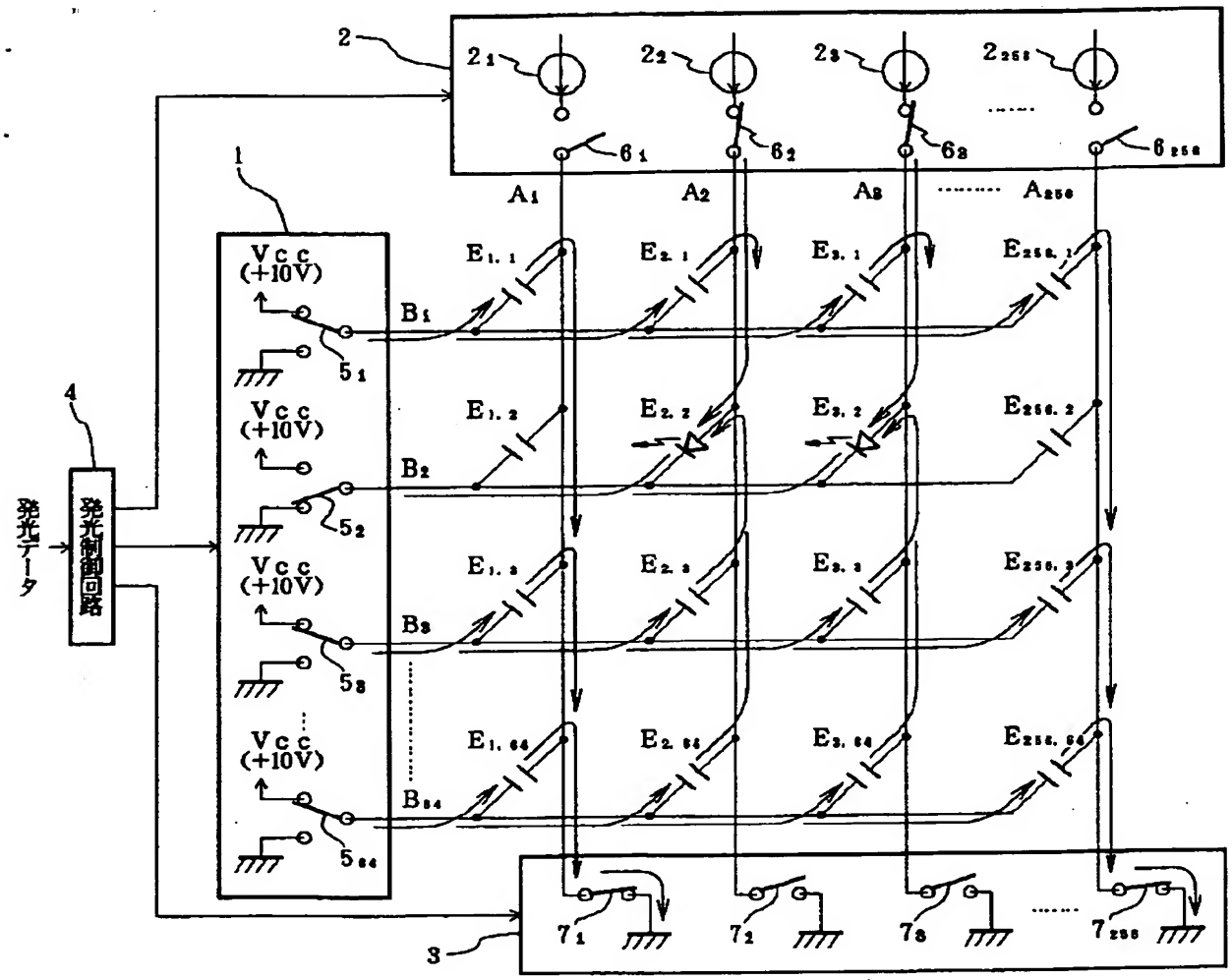
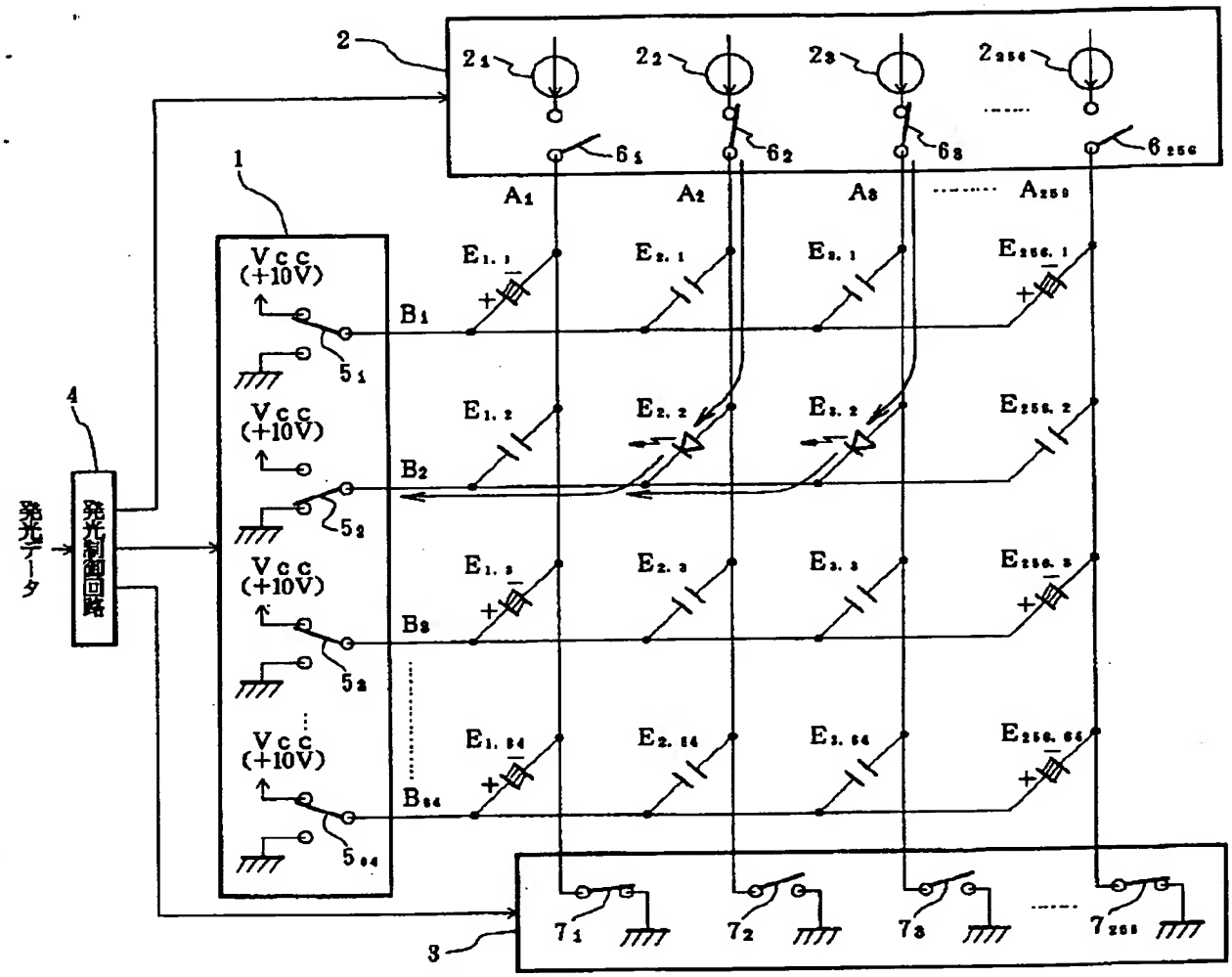
3
Vcc
(+10V)
A1
A2
A3
A256
B1
B2
B3
B64
5 1
5 2
5 3
5 64
6 1
6 2
6 3
6 256
7 1
7 2
7 3
7 256

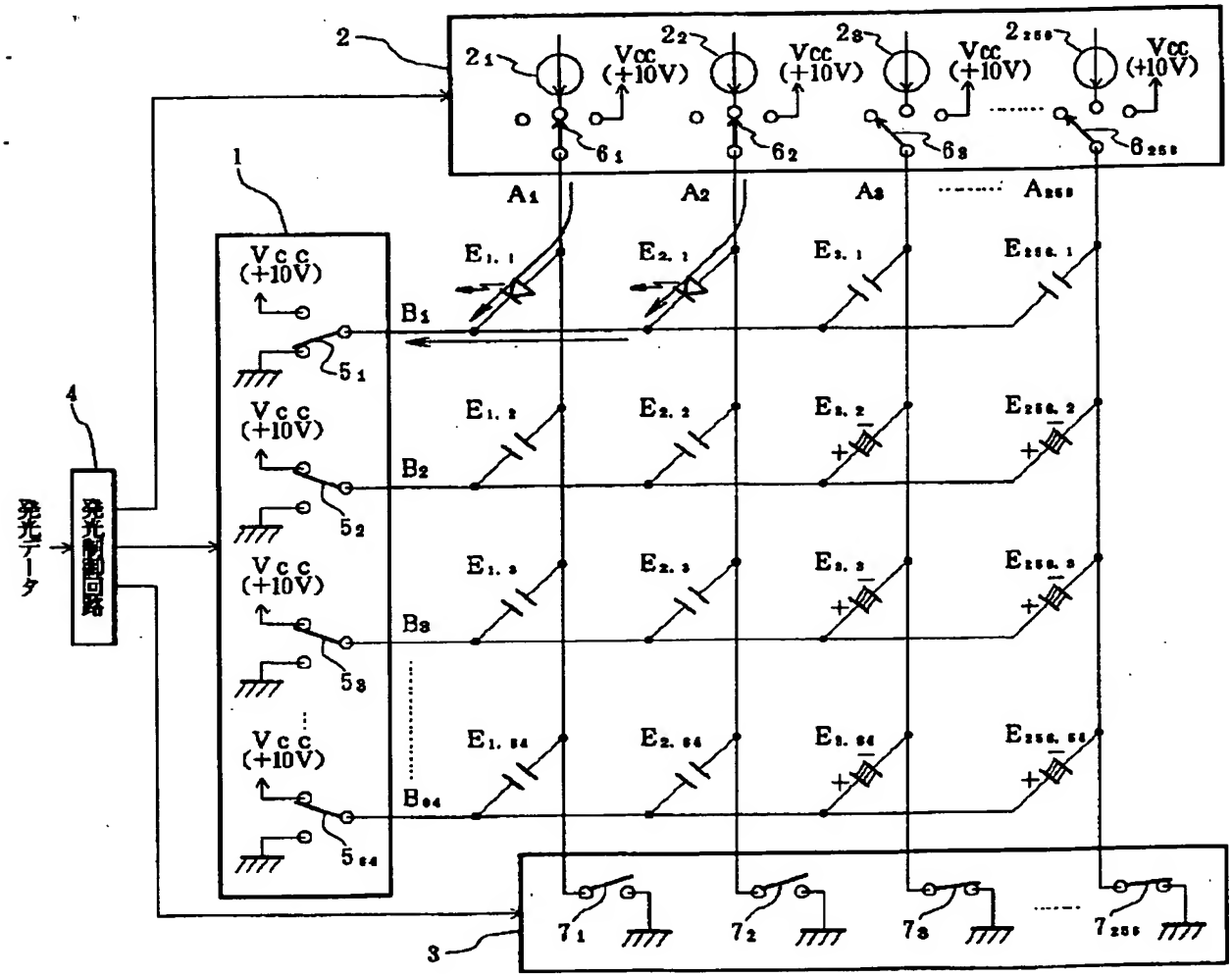
[Drawing 3]



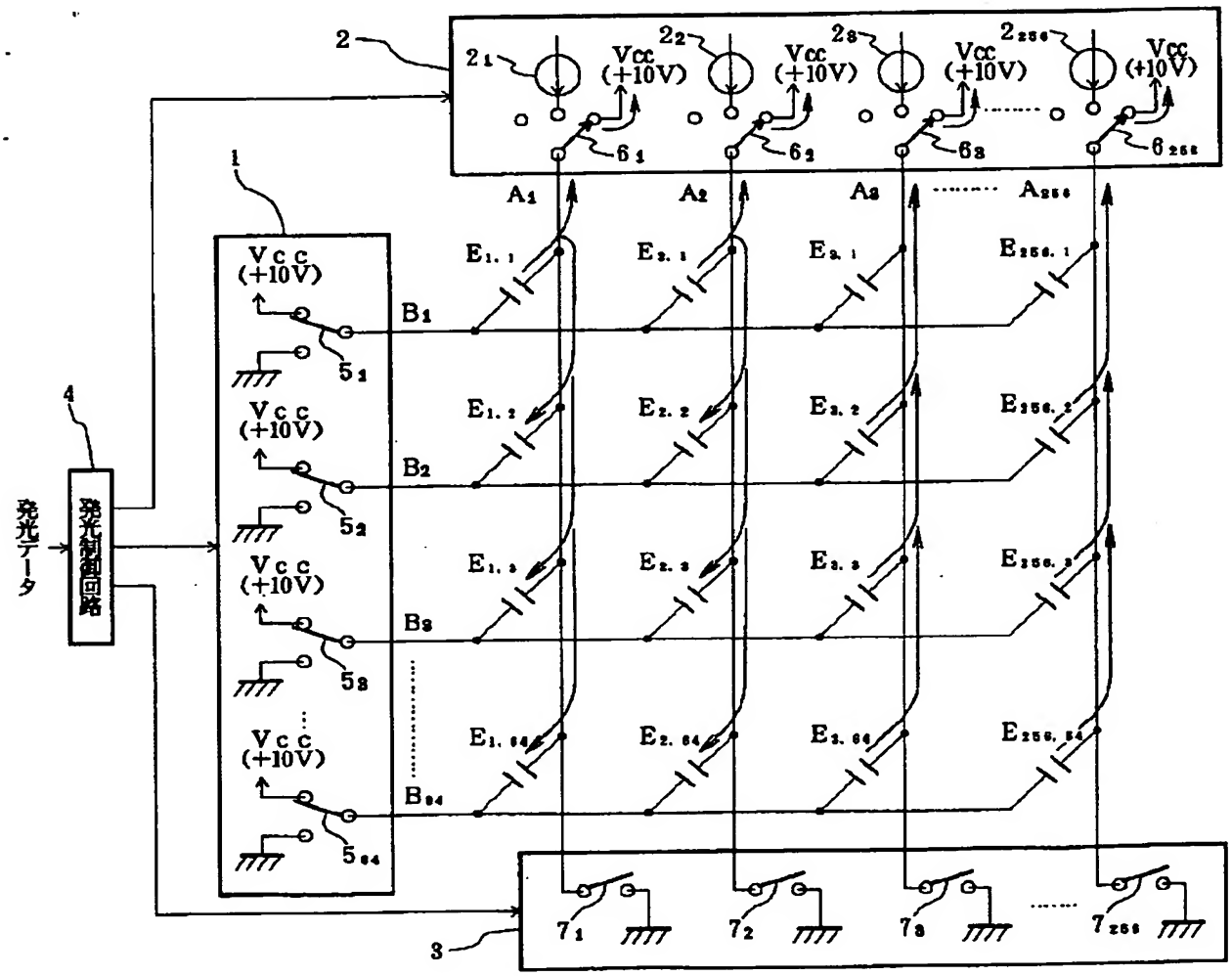
[Drawing 4]


2
1
4
3
発光データ
発光制御回路
Vcc
(+10V)
B1
B2
B3
B64
A1
A2
A3
A256
5 1
5 2
5 3
5 64
6 1
6 2
6 3
6 256
7 1
7 2
7 3
7 256

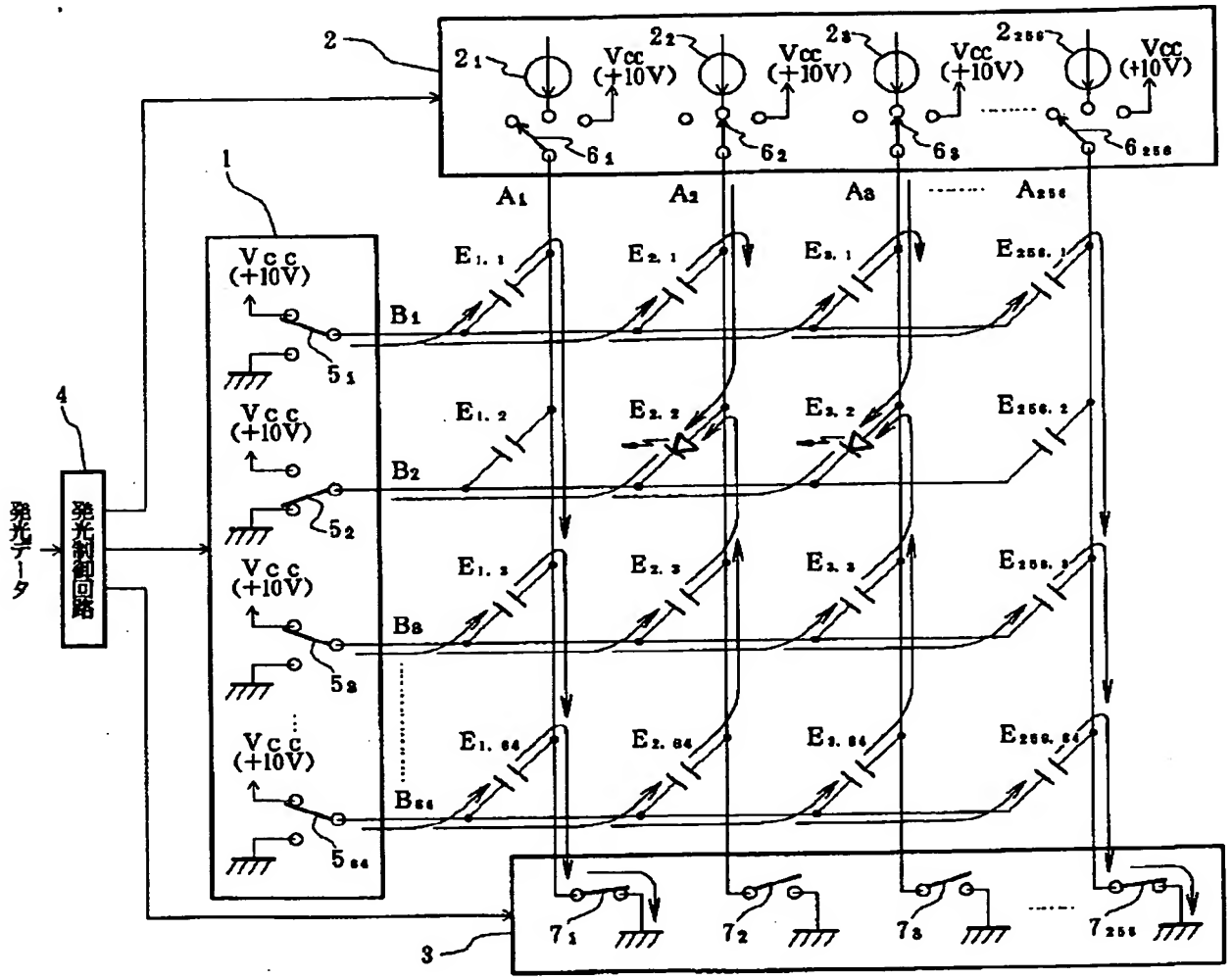
[Drawing 5]


2
1
4
3
発光データ
発光制御回路
Vcc
(+10V)
A1
A2
A3
A256
B1
B2
B3
B64
5 1
5 2
5 3
5 64
6 1
6 2
6 3
6 256
7 1
7 2
7 3
7 256

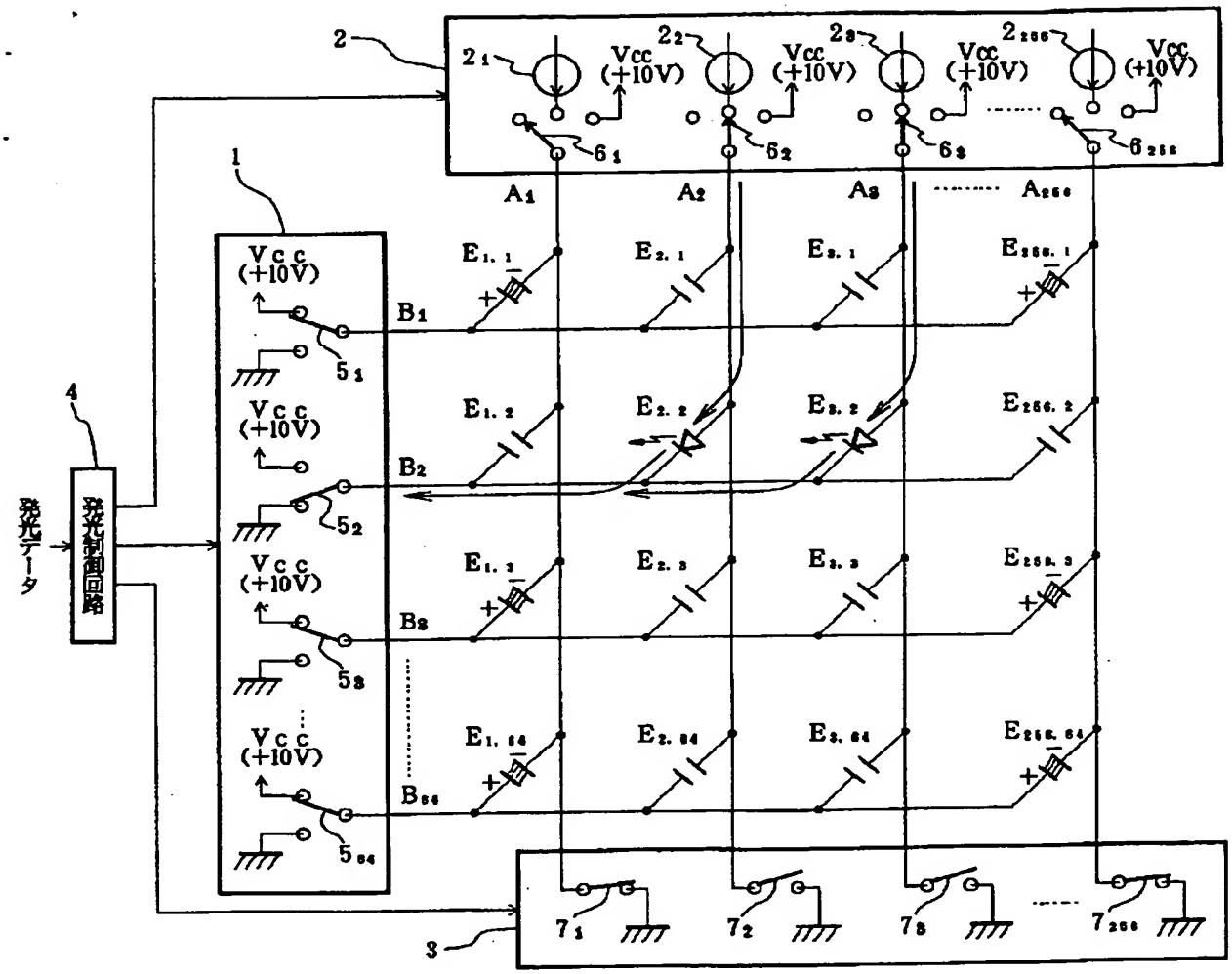
[Drawing 6]


2
1
4
3
発光データ
発光制御回路
Vcc (+10V)
A1
A2
A3
A256
B1
B2
B3
B64
E1, 1
E2, 1
E3, 1
E256, 1
E1, 2
E2, 2
E3, 2
E256, 2
E1, 3
E2, 3
E3, 3
E256, 3
E1, 64
E2, 64
E3, 64
E256, 64

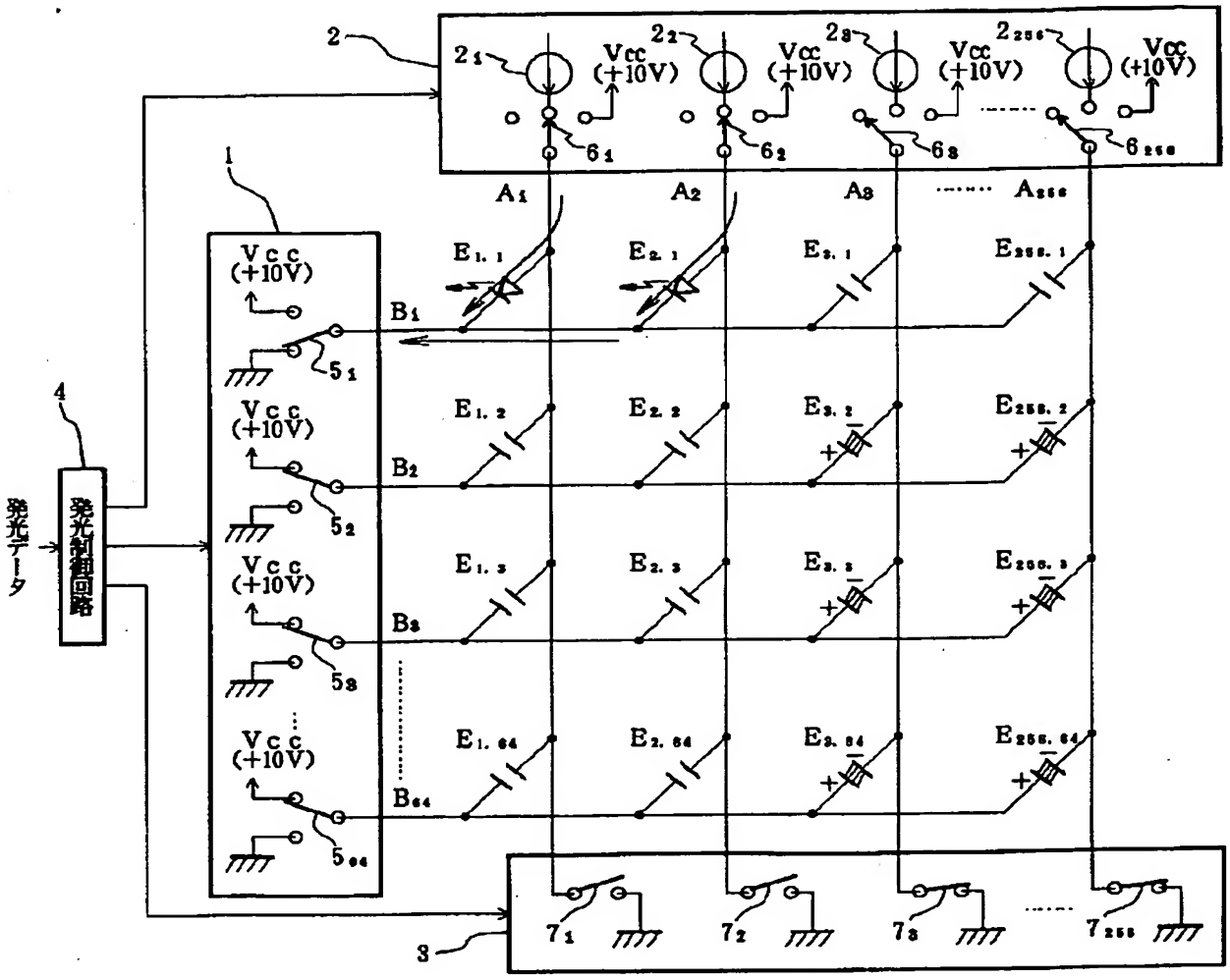
[Drawing 7]


2
1
4
3
発光データ
発光制御回路
Vcc (+10V)
A1
A2
A3
A256
B1
B2
B3
B64
5 1
5 2
5 3
5 64
6 1
6 2
6 3
6 256
7 1
7 2
7 3
7 256

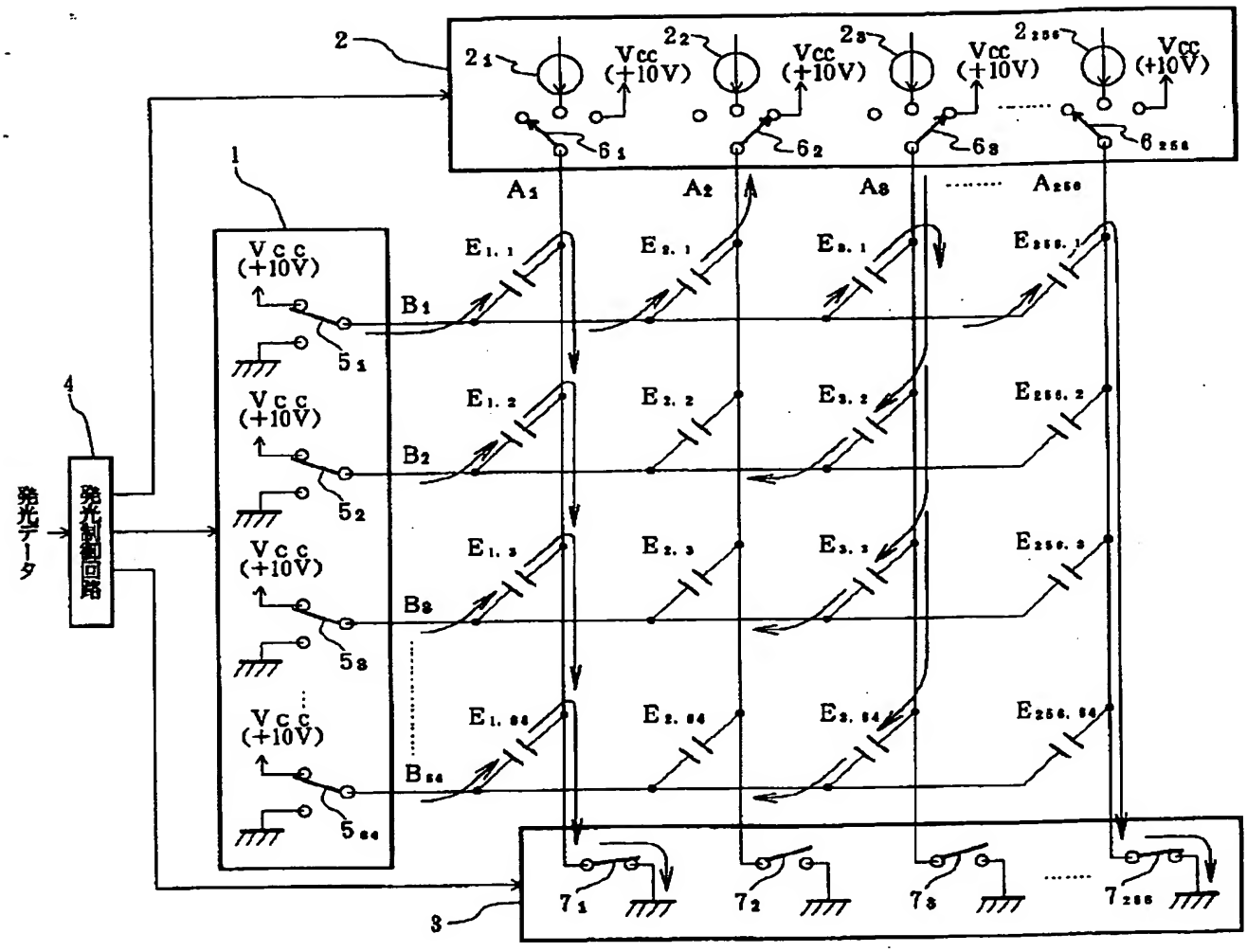
[Drawing 8]


2
1
4
発光データ
発光制御回路
3
Vcc (+10V)
A1
A2
A3
A256
B1
B2
B3
B64
E1. 1
E2. 1
E3. 1
E256. 1
E1. 2
E2. 2
E3. 2
E256. 2
E1. 3
E2. 3
E3. 3
E256. 3
E1. 64
E2. 64
E3. 64
E256. 64

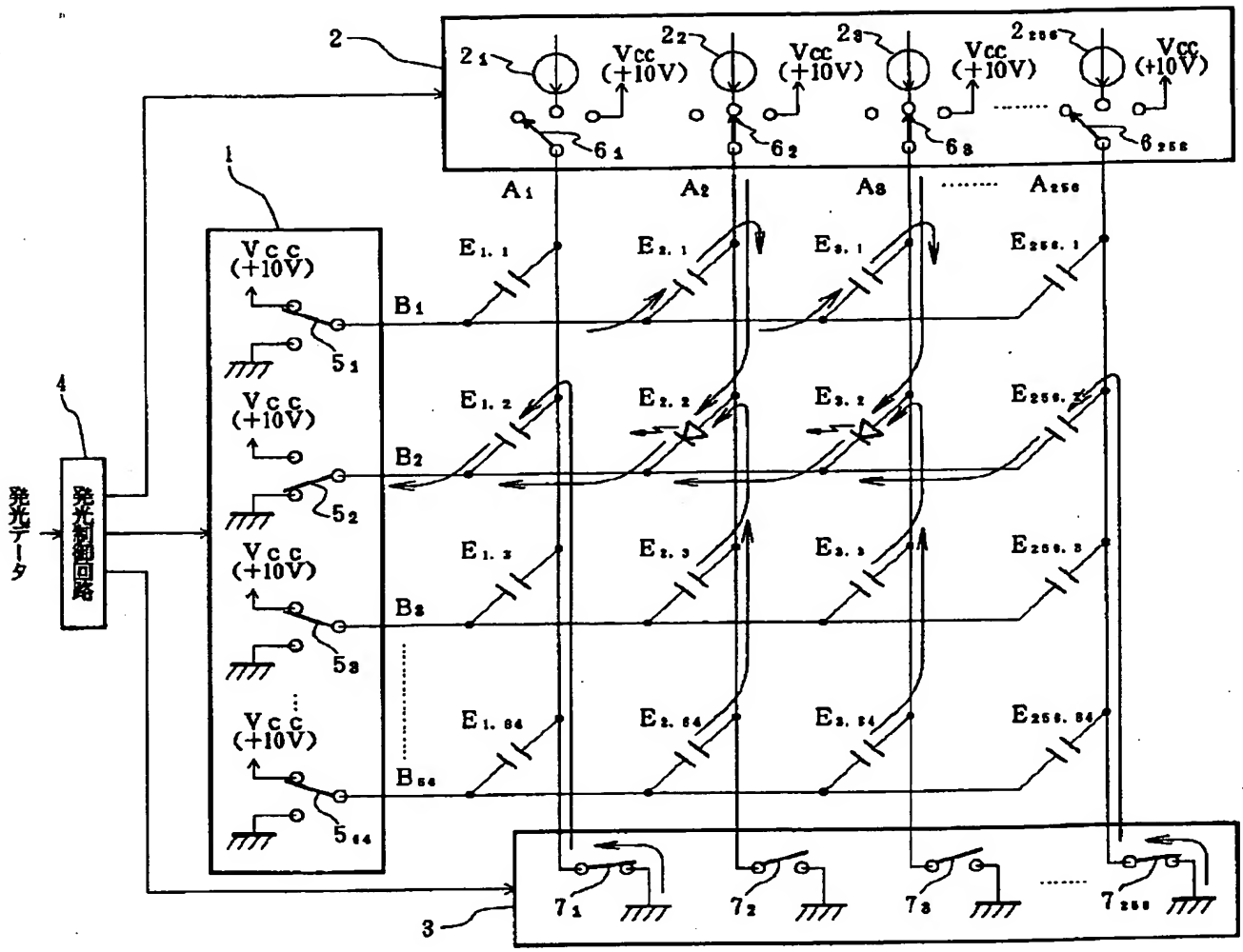
[Drawing 9]


2
1
4
3
発光データ
発光制御回路
Vcc (+10V)
A1
A2
A3
A256
B1
B2
B3
B64
E1. 1
E2. 1
E3. 1
E256. 1
E1. 2
E2. 2
E3. 2
E256. 2
E1. 3
E2. 3
E3. 3
E256. 3
E1. 64
E2. 64
E3. 64
E256. 64

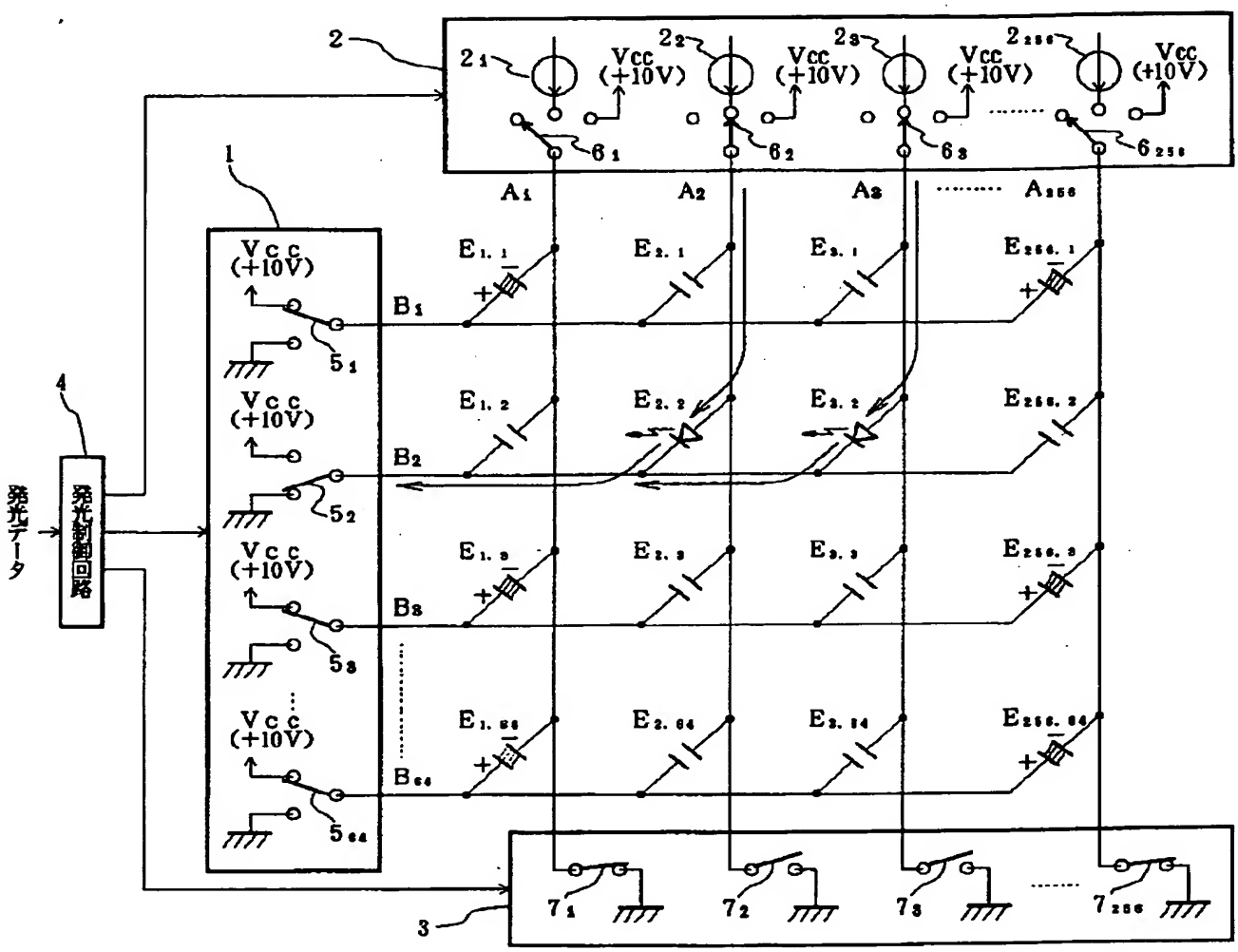
[Drawing 10]


2
1
4
発光データ
発光制御回路
3
Vcc (+10V)
A1
A2
A8
A256
B1
B2
B8
B64
5 1
5 2
5 8
5 64
6 1
6 2
6 8
6 256
7 1
7 2
7 8
7 256
E1. 1
E2. 1
E8. 1
E256. 1
E1. 2
E2. 2
E8. 2
E256. 2
E1. 8
E2. 8
E8. 8
E256. 8
E1. 64
E2. 64
E8. 64
E256. 64

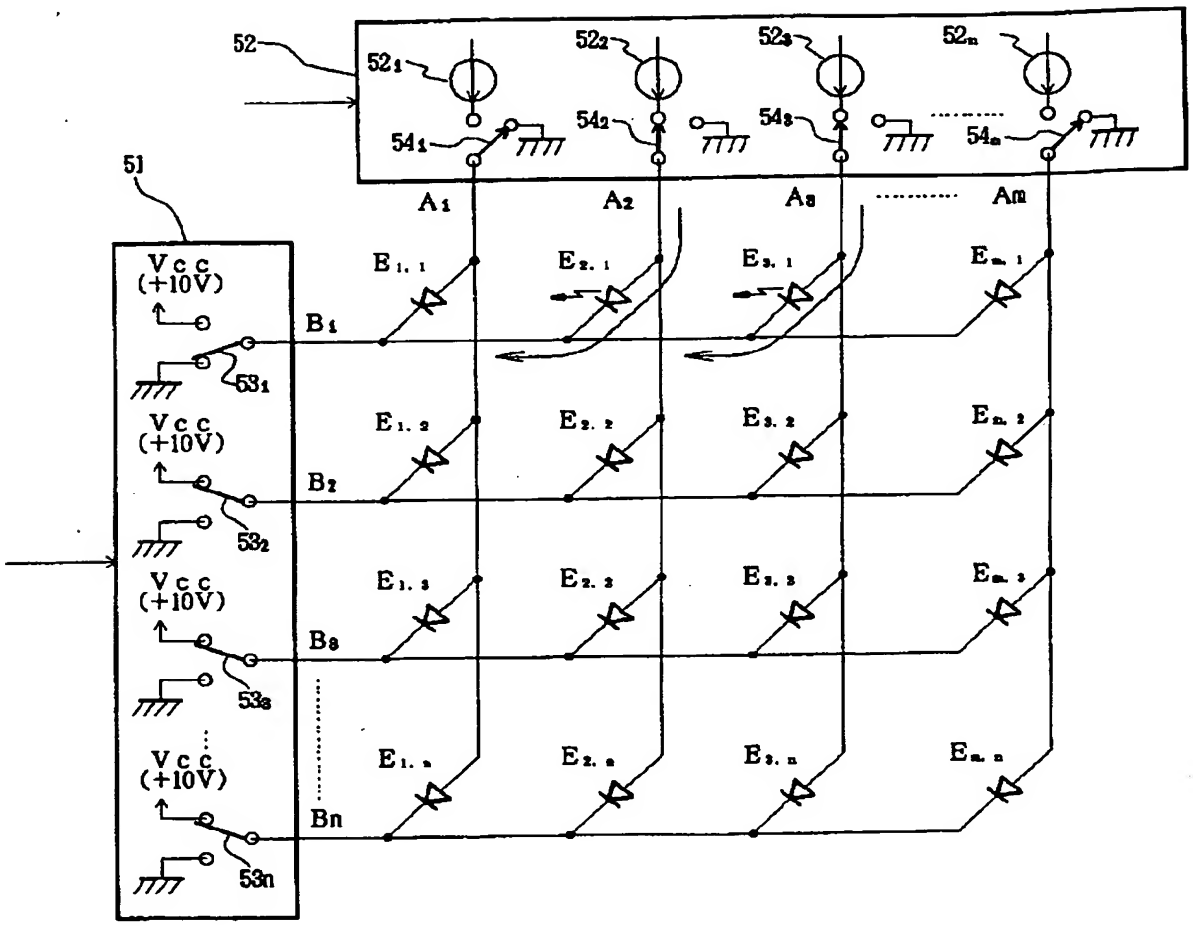
[Drawing 11]


2
1
4
3
発光データ
発光制御回路
Vcc (+10V)
A1
A2
A3
A256
B1
B2
B3
B64
E1.1
E2.1
E3.1
E256.1
E1.2
E2.2
E3.2
E256.2
E1.3
E2.3
E3.3
E256.3
E1.64
E2.64
E3.64
E256.64

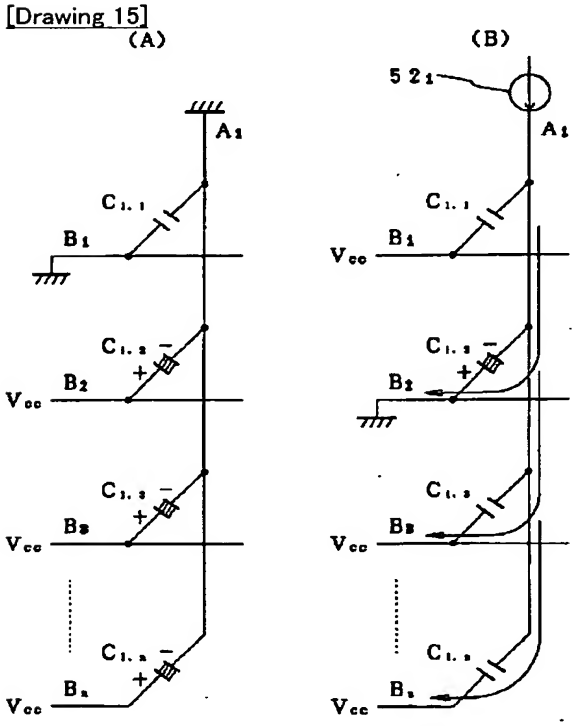
[Drawing 12]


2
1
4
3
発光データ
発光制御回路
Vcc (+10V)
A1
A2
A3
A256
B1
B2
B3
B64
E1. 1
E2. 1
E3. 1
E256. 1
E1. 2
E2. 2
E3. 2
E256. 2
E1. 3
E2. 3
E3. 3
E256. 3
E1. 64
E2. 64
E3. 64
E256. 64

[Drawing 13]



[Drawing 15]



[Translation done.]